

but if the inactive iron was first connected with a piece of platina dipping into the solution, and then its own prepared surface immersed, after a few seconds the platina might be removed, and the iron would remain pure and bright for some time. At last it usually started into activity, and began to precipitate copper, being itself rapidly corroded. When silver is the metal in solution, the effect is still more striking, and will be referred to immediately.

I then used a galvanometer as the means of connection between the iron and other metals thus associated together in nitric acid, for the purpose of ascertaining, by the electric currents produced, in what relative condition the metals stood to each other; and I will, in the few results I may have to describe, use the relations of platina and zinc to each other as the terms of comparison by which to indicate the states of these metals under various circumstances.

The oxidised iron wire of Professor Schoenbein is, when in association with platina, exactly as another piece of platina would be. There is no chemical action, nor any electric current. The iron wire, rendered inactive either by association with the oxidised wire or in any other way, is also as platina to the platina, and produces no current.

When ordinary iron and platina in connection by means of the galvanometer are dipped into the acid (it matters not which first), there is action at the first moment on the iron, and a very strong electric current, the iron being as zinc to the platina. The action on the iron is, however, soon stopped by the influence of the platina, and then the current instantly ceases, the iron now acting as platina to the platina. If the iron be lifted into the air for a moment until action recommences on it, and be then reimmersed, it again produces a current, acting as zinc to the platina; but as before, the moment the action stops, the current is stopped also.

If an active or ordinary, and an inactive or peculiar iron wire be both immersed in the nitric acid separately, and then connected either directly or through the galvanometer, the second does not render the first inactive, but is itself thrown into action by it. At the first moment of contact, however, a strong electric current is formed, the first iron

acting as zinc, and the  
second as platina. Immediately that the  
chemical action is  
re-established at the second as well as  
the first, all current  
ceases, and both pieces act like zinc. On  
touching either of  
them in the acid with a piece of platina,  
both are protected,